



Week ending April 25, 2009



The PA-1 crew module was weighed and transferred to jacks for the center of gravity testing at the Dryden Flight Research Center (Photo above and insert).



The series “A” of the crew module propulsion engine loads capability risk reduction testing is complete.

The test objectives were to better understand the risk associated with the high vibration loads (ascent and abort) on the thruster, the capability of the heritage design (MR-104D X-38) thrusters to survive high vibration and subsequent hot-fire testing, and finally to provide data for anchoring structural models of the Orion design (MR-104G).



The Landing and Descent Team’s first “system of struts” test with the rigid pallet and nine struts was conducted.

This was a relatively low energy impact with an impact velocity of 32 fps and peak acceleration pulse of 12 Gs. The strut displacement predicted from the LS-Dyna model was about 1.8 inches in strut #3. Photos taken from the test show a final displacement of about 2.3 inches for strut #3. There were some differences in the response of other struts versus the LS-Dyna model. These differences are primarily with the X-direction struts and are being investigated with additional assessment of the test data and analysis. The test results have been presented to Task #3 and #2. The next test will have a higher acceleration pulse (15 Gs) to generate maximum displacements of about 4 inches.



The Low Impact Docking System new linear actuators were installed in the EDU-54 Soft Capture System. The new actuators are lighter than the original design, and have better acceleration performance.

The build-up of FPGA prototype boards is complete. The boards will be used for CE development and as PC-to-board interfaces for card testing. The schematic and layout of the Bragg Peak radiation test board was completed. The Attitude Control Motor Pellet Container Test 3 is completed and the data appears nominal.



Michoud Assembly Facility (MAF) Activation

The Crew Module Ground Test Article Production lessons learned are being compiled from the first weld to support subsequent Cone Panel to Longeron welds. Shown on left is the GTA Crew Module Cone Panel Tack Weld Pass # 4.

Integrated Environmental Test Facilities at Glenn Research Center

The propagation and reverberation of high-frequency radio signals testing inside the Space Power Facility thermal vacuum chamber began as part of the E3 (electromagnetic environmental effects) capability development effort.



The Mechanical Vibration Facility first foundation pour and rebar placement (Photo left) started in preparation for concrete pour later in May.

Communications and Public Engagement

The Orion team and Ares Project Office teamed for an education outreach activity for 6th grade students and teachers at the Randolph School in Huntsville, Alabama, prior to the start of an Orion Lockheed Martin program management review. The event introduced the students to the Constellation Program elements, careers in aerospace and the importance of Science, Technology, Engineering and Math (STEM) education. In addition the students enjoyed space-related activities.



Sergio Lucero (Photo left) of Orbital Sciences Corporation talked to students at Randolph school about Orion and its launch abort system (Photo left and right).

